

Appn No. 09/891,412
Reply to the Office Action dated November 5, 2003

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claim 1. (Currently Amended) A method of producing a silica gel, which comprises:
hydrolyzing a silicon alkoxide, thereby forming a hydrogel; and
subjecting the resulting hydrogel to a hydrothermal treatment substantially without aging
it the hydrogel.

Claim 2. (Original) The method for producing a silica gel according to Claim 1, wherein
a hydrogel having a breaking stress of at most 6 MPa is subjected to the hydrothermal treatment.

Claim 3. (Currently Amended) The method for producing a silica gel according to Claim
1, wherein the hydrothermal treatment is carried out at a temperature of ranging from 50 to 150°
C for from 1 to 10 hours.

Claim 4. (Currently Amended) The method for producing a silica gel according to Claim
1, wherein an ammonia water is used for the hydrothermal treatment is conducted in ammonia
water.

Claim 5. (Currently Amended) The method for producing a silica gel according to Claim

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1, wherein an obtained silica gel is a silica gel which has the following characteristics:

- (a) the a pore volume is ranging from 0.6 to 1.6 ml/g,
- (b) the a specific surface area is ranging from 300 to 900 m²/g,
- (c) the a mode diameter (D_{max}) of pores is of less than 20 nm,
- (d) the a volume of pores having diameters within $\pm 20\%$ of D_{max} is of at least 50 % of the total pore volume;
- (e) it is amorphous, and
- (f) the content of metal impurities is at most 500 ppm.

Claim 6. (Original) The method for producing a silica gel according to Claim 1, wherein hydrolysis of said silicon alkoxide is conducted in the absence of a template.

Claim 7. (Currently Amended) A silica gel, produced by a process comprising: hydrolyzing a silicon alkoxide, thereby forming a hydrogel; and subjecting the resulting hydrogel to a hydrothermal treatment substantially without aging it the hydrogel.

Claim 8. (Original) The silica gel according to Claim 7, wherein a hydrogel having a breaking stress of at most 6 MPa is subjected to the hydrothermal treatment.

Claim 9. (Currently Amended) The silica gel according to Claim 7, wherein the hydrothermal treatment is carried out at a temperature of ranging from 50 to 150° C for from 1

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to 10 hours.

Claim 10. (Currently Amended) The silica gel according to Claim 7, wherein ~~an ammonia water is used for the hydrothermal treatment is conducted in ammonia water.~~

Claim 11. (Currently Amended) The silica gel according to Claim 7, wherein an obtained silica gel is a silica gel which has the following characteristics:

- (a) ~~the a~~ pore volume is ranging from 0.6 to 1.6 ml/g,
- (b) ~~the a~~ specific surface area is ranging from 300 to 900 m²/g,
- (c) ~~the a~~ mode diameter (D_{max}) of pores is of less than 20 nm,
- (d) ~~the a~~ volume of pores having diameters within $\pm 20\%$ of D_{max} is of at least 50 % of the total pore volume;
- (e) it is amorphous, and
- (f) the content of metal impurities is at most 500 ppm.

Claim 12. (Currently Amended) The silica gel according to Claim 11, wherein the pore volume is ranges from 0.8 to 1.6 ml/g.

Claim 13. (Currently Amended) The silica gel according to Claim 11, wherein the specific surface area is ranges from 400 to 900 m²/g.

Claim 14. (Original) The silica gel according to Claim 11, wherein the mode diameter

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(Dmax) is at least 2 nm.

Claim 15. (Original) The silica gel according to Claim 11, wherein the volume of pores having diameters within $\pm 20\%$ of Dmax is at least 60 % of the total pore volume.

Claim 16. (Original) The silica gel according to Claim 11, wherein the content of metal impurities is at most 10 ppm.

Claim 17. (Currently Amended) The silica gel according to Claim 11, wherein the content of metal impurities is at most 1 ppm.

Claim 18. (Currently Amended) The silica gel according to Claim 11, wherein the differential pore volume at the mode diameter (Dmax) is ranges from 5.0 to 12.0 ml/g.

Claim 19. (Original) The silica gel according to Claim 11, wherein the value of Q4/Q3 in solid state Si-NMR is at least 1.3.

Claim 20. (Original) The silica gel according to Claim 7, wherein hydrolysis of said silicon alkoxide is conducted in the absence of a template.

Claim 21. (Original) The silica gel according to Claim 11, wherein hydrolysis of said silicon alkoxide is conducted in the absence of a template.

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Claim 22. (Currently Amended) A silica gel which has the following characteristics:

- (a) ~~the a~~ pore volume ~~is~~ ranging from 0.6 to 1.6 ml/g,
- (b) ~~the a~~ specific surface area ~~is~~ ranging from 300 to 900 m²/g,
- (c) ~~the a~~ mode diameter (Dmax) of pores ~~is~~ of less than 20 nm,
- (d) ~~the a~~ volume of pores having diameters within $\pm 20\%$ of Dmax ~~is~~ of at least 50 % of the total pore volume;
- (e) it is amorphous, and
- (f) the content of metal impurities is at most 500 ppm.

Claim 23. (Currently Amended) The silica gel according to Claim 22, wherein the pore volume ~~is~~ ranges from 0.8 to 1.6 ml/g.

Claim 24. (Currently Amended) The silica gel according to Claim 22, wherein the specific surface area ~~is~~ ranges from 400 to 900 m²/g.

Claim 25. (Original) The silica gel according to Claim 22, wherein the mode diameter (Dmax) is at least 2 nm.

Claim 26. (Original) The silica gel according to Claim 22, wherein the volume of pores having diameters within $\pm 20\%$ of Dmax is at least 60 % of the total pore volume.

Claim 27. (Original) The silica gel according to Claim 22, wherein the content of metal

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impurities is at most 10 ppm.

Claim 28. (Currently Amended) The silica gel according to Claim 22 27, wherein the content of metal impurities is at most 1 ppm.

Claim 29. (Currently Amended) The silica gel according to Claim 22, wherein the differential pore volume at the mode diameter (Dmax) is ranges from 5.0 to 12.0 ml/g.

Claim 30. (Original) The silica gel according to Claim 22, wherein the value of Q4/Q3 in solid state Si-NMR is at least 1.3.

Claim 31. (Original) The silica gel according to Claim 22, which is produced by means of a step of hydrolyzing a silicon alkoxide.

Claim 32. (New) A method of producing a silica gel, which comprises:
hydrolyzing a silicon alkoxide, thereby forming a hydrogel which has a breaking stress of at most 6 MPa; and
subjecting the hydrogel to a hydrothermal treatment substantially without aging the hydrogel.